

The listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

**1. (Currently Amended)** An apparatus, comprising;

a data input device, the data input device comprising:

a display screen having a first dimension and a second dimension defined by a first axis and a second axis, respectively, the dimensions defining the area for the display screen, the **display** screen having a free space adjacent the display screen;

a light source configured to generate a substantially continuous lamina of light **that is projected from a plurality of spaced apart optical facets** such that the lamina extends into the free space adjacent the display screen wherein the lamina extends over a substantial portion of the area of the display screen, the substantially continuous lamina of light being generated when the data input device is on; and

an optical position detection device **comprising a light receiving array having a plurality of lenses integrally formed with an associated plurality of optical channels, the array** optically coupled to the substantially continuous lamina of light **such that the plurality of lenses capture light from the lamina and focus the light into the associated plurality of optical channels**, and configured to detect data entries to the input device by determining the location of interrupts in the substantially continuous lamina caused when data is entered to the input device.

**2. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina comprises a three dimensional space defined by the first axis, the second axis, and a third axis.

**3. (Cancelled)**

**4. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina of light is of uniform intensity.

**5. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina of light is of non-uniform intensity.

**6. (Previously Presented)** The apparatus of claim 1, wherein the light source configured to generate the substantially continuous lamina of light is a collimated light source.

**7. (Currently Amended)** The apparatus of claim 1, wherein the substantially continuous lamina of light **is selected from among: ~~has at least one of:~~**

- (i) an extended wavelength range from 350 to 1100 nanometers;
- (ii) a narrow wavelength range within 2 nanometers; or
- (iii) a substantially homogeneous wavelength.

**8. (Currently Amended)** The apparatus of claim 1, wherein the substantially continuous lamina of light has a wavelength determined by **~~at least~~** one of:

- (i) an incandescent light source used to generate the substantially continuous lamina of light;
- (ii) a specific wave length range substantially matching the response profile of a light receiving element used in the optical position detection device;
- (iii) an Light Emitting Diode;
- (iv) a Vertical Cavity Surface Emitting Laser (VCSEL), or
- (v) an IR wavelength generator used to generate the substantially continuous lamina of light.

**9. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina of light is continuously on during operation of the data input device.

**10. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina of light is periodically cycled on and off during operation of the data input device.

**11. (Currently Amended)** The apparatus of claim **2** **[[1]]**, **wherein the light source includes a first light source configured to generate a first portion of the lamina extending parallel to**

the first axis and a second light source configured to generate a second portion of the lamina extending parallel to the second axis;

wherein said first and second portions of the substantially continuous lamina of light are periodically cycled on and off during operation of the data input device by alternatively cycling between the first light source and the second light source;

and

further comprising a subtraction device configured to subtract the measured ambient light, as determined during an off cycle for each of the first and second portions of the substantially continuous lamina of light, from the measured light during ~~[[an]]~~ a respective on cycle for each of the first and second portions of the lamina of light.

**12. (Currently Amended)** The apparatus of claim 1 ~~[[3]]~~, wherein the display screen is for one of the following types of devices: a data entry device, a personal computer, a workstation, a computer server, a point of sale terminal, a mobile computer, a personal digital assistant (PDA), a cell phone.

**13. (Previously Presented)** The apparatus of claim 1, wherein the light source is positioned on one side of the substantially continuous lamina of light opposed to the optical position detection device located on the opposite side of the substantially continuous lamina of light.

**14. (Previously Presented)** The apparatus of claim 13, wherein the light source is generated from one of the following:

(i) a point source and a collimating lens; or

(ii) an LED.

**15. (Currently Amended)** The apparatus of claim 1, wherein the ~~optical position detection device further comprises:~~

~~a light receiving array,~~ the light receiving array is further configured to detect the position of an interrupt in the substantially continuous lamina of light caused during a data entry to the data input device; and

a processor, coupled to the light receiving array, the processor configured to calculate the coordinate of the interrupt on the substantially continuous lamina of light based on the position of the interrupt as detected by the light receiving array.

**16. (Currently Amended)** The apparatus of claim 15, wherein the light receiving array includes a waveguide substrate having the plurality of waveguide channels; is a waveguide substrate, the waveguide substrate including:

~~a plurality of waveguide channels each waveguide channel having a light input end proximate the substantially continuous lamina of light and including an associatean output end;~~ and

a plurality of photosensitive elements, each photosensitive element positioned proximate ~~[[the]]~~ an output end of one of the waveguide channels, and configured to convert a light signal received through the waveguide channel and to convert it into an electrical signal.

**17. (Currently Amended)** The apparatus of claim 16, wherein the photosensitive elements comprise one of the following types of photosensitive elements: charge coupled devices or Metal Oxide ~~[[Oxide]]~~ Semiconductor (MOS) imaging devices.

**18. (Cancelled)**

**19. (Cancelled)**

**20. (Previously Presented)** The apparatus of claim 15, wherein the optical position detection device further comprises a light filter to filter a selected wavelength range of light from the substantially continuous lamina of light.

**21. (Previously Presented)** The apparatus of claim 1, wherein the substantially continuous lamina of light defines a two dimensional plane and the optical position detection device further comprises a first light receiving array positioned along one side of the substantially continuous lamina and a second light receiving array positioned along a second side of the substantially continuous lamina, wherein the first side and the second side are adjacent to one another.

**22. (Previously Presented)** The apparatus of claim 21, wherein the light source further comprises a first light source and a second light source positioned along a third side and an

fourth side of the substantially continuous lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively.

**23. (Previously Presented)** The apparatus of claim 1, further comprising a sleep mode element configured to dim the substantially continuous lamina of light if a data entry is not detected by the optical position detection device after a predetermined period of time.

**24. (Currently Amended)** A method, comprising;

providing a display screen;

projecting light through a plurality of spaced apart optical facets to generate a substantially continuous [[a]] lamina of light over a substantial portion of the display screen;

collecting light from the lamina with a light receiving array mounted on a waveguide substrate, the array comprising a plurality of lenses integrally formed with an associated plurality of optical channels configured so that the lenses capture light from the lamina and focus the captured light into the associated plurality of optical channels,

interrupting the substantially continuous lamina of light at selected position, the selected position representing a data entry to a data input device; and

calculating the coordinate location of the interrupt in the substantially continuous lamina of light to determine the data entry.

**25. (Currently Amended)** The method of claim 24, wherein the interrupting the substantially continuous lamina of light at the selected position comprises:

identifying the position on [[a]] said display screen corresponding to a data entry;

touching with an input device the position on the display screen corresponding to the data entry; and

interrupting the substantially continuous lamina of light positioned in the free space adjacent the display screen during the touching of the display screen with the input device; wherein the method further comprises:

identifying the data entry by determining the coordinates of the interruption in the substantially continuous lamina of light.

**26. (Currently Amended)** The method of claim 25, wherein the determining the coordinates of the interruption further comprises:

determining the position where incident lamina light is blocked at one or more of a plurality of light receiving elements **coupled with the optical channels.**

**27. (Previously Presented)** The method of claim 24 further comprising generating the substantially continuous lamina of light prior to interrupting the substantially continuous lamina of light.

**28. (Currently Amended)** A method, comprising;

providing a data input device, ~~the provided~~ **said providing the** data input device comprising:

**providing a display screen;**

providing a light source **that projects light through a plurality of spaced apart optical facets to generate a substantially continuous lamina of light over a substantial portion of the display screen;**

~~providing a substantially continuous lamina of light from the provide light source such that the lamina extends adjacent to a substantial portion of the display screen, the substantially continuous lamina of light being generated when the data input device is on;~~

and

providing an optical position detection device, optically coupled to the continuous lamina of light, and configured to detect data entries to the provided input device by determining the location of interrupts in the provided continuous lamina caused when data is entered to the input device.

**29. (Previously Presented)** The method of claim 28, whereby the substantially continuous lamina of light in the free space adjacent the provided display screen is interrupted when data entries directed to the provided display screen are made by contacting the display screen.

**30. (Previously Presented)** The method of claim 28, wherein the provided substantially continuous lamina of light defines a two dimensional plane and the provided optical position detection device further comprises providing a first light receiving array positioned along one side of the substantially continuous lamina and providing a second light receiving array positioned along a second side of the substantially continuous lamina, wherein the first side and the second side are adjacent to one another.

**31. (Previously Presented)** The method of claim 30, further comprising providing a first light source and providing a second light source positioned along a third side and an fourth side of the substantially continuous lamina, the third side and the fourth side being adjacent to one another and being opposite of the first side and the second side respectively.

**32. (Previously Presented)** A method of claim 28, wherein the provided substantially continuous lamina comprises:

- (i). a one dimension plane defined by a first axis;
- (ii) a two dimensional plane defined by a first axis and a second axis; or
- (iii) a three dimensional space defined by a first axis, a second axis, and a third axis.

**33. (Previously Presented)** The method of claim 28, wherein the provided substantially continuous lamina of light is of uniform intensity.

**34. (Previously Presented)** The method of claim 28, wherein the provided substantially continuous lamina of light is of non-uniform intensity.

**35. (Previously Presented)** The method of claim 28, wherein the provided substantially continuous lamina of light is periodically cycled on and off during operation of the provided data input device.

**36. (Previously Presented)** The method of claim 35, further comprising providing a subtraction device configured to subtract the measured ambient light during an off cycle of the substantially continuous lamina of light from the measured light during an on cycle of the substantially continuous lamina of light.

**37. (Previously Presented)** The method of claim 28, wherein the display screen is for one of the following types of devices: a data entry device, a personal computer, a workstation, a

computer server, a mobile computer, a point of sale device, a personal digital assistant (PDA), a cell phone.

**38. (Previously Presented)** The method of claim 28, wherein the provided substantially continuous lamina of light is generated from a collimated light source.

**39. (Cancelled)**

**40. (Cancelled)**

**41. (Cancelled)**

**42. (Currently Amended)** The apparatus of Claim 28 wherein providing a light source comprises arranging a plurality of a plurality of spaced apart optical facets ~~point light sources~~ along each of a pair of axes to generate said substantially continuous lamina.

**43. (Cancelled)**

**44. (New)** An apparatus as recited in Claim 1 wherein the data input device comprises a waveguide substrate that supports the plurality of optical fibers and the plurality of integrally formed lenses such that the lenses are formed on and protrude from an inner surface of the waveguide substrate to facilitate the receiving of the substantially continuous lamina of light.

**45. (New)** The apparatus of Claim 1, wherein the substantially continuous lamina of light has a narrow wavelength range within 2 nanometers.

**46. (New)** The method of claim 31, wherein the first light source is configured to generate a first portion of the lamina extending from the third side to the first side and the second light source configured to generate a second portion of the lamina extending from the fourth side to the second side;

wherein said first and second portions of the substantially continuous lamina of light are periodically cycled on and off during operation of the data input device by alternatively cycling between the first light source and the second light source;

further comprising measuring an ambient light environment during an off cycle for each of the first and second portions of the substantially continuous lamina of light; and



subtracting the measured ambient light from a measured light during a respective on cycle for each of the first and second portions of the lamina of light.